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EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2474	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,671	LOHR ET AL.	
	Examiner	Art Unit	
	HABTE MERED	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/7/2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *79,81-93,95-100,102-105,107-113,118,120-125 and 127-129* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *79,81-93,95-100,102-105,107-113,118,120-125 and 127-129* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/07/2010 has been entered.

2. The amendment filed on 6/07/2010 has been entered and fully considered.

3. Claims 79, 81-93, 95-100, and 102-105, 107-113, 118,120-125, and 127-129 are currently pending. Claims 79, 100, and 118 are the base independent claims. All of the base independent claims are amended.

Response to Arguments

4. Applicant's arguments with respect to all pending amended claims filed on 6/07/2010 have been fully considered but they are not persuasive.

5. In the Remarks on pages 12-13 Applicant argues with respect to claims 118 and 128-129 that previous objections should be withdrawn because the specification provides specific examples of non-transitory computer readable storage media.

Examiner respectfully disagrees. The specification does not provide a complete list of non-transitory computer readable storage media. In fact specification paragraph 175 cited by Applicant starts by indicating that the software can be stored in "any"

computer readable storage medium and then provides some examples. Hence the transitory computer readable storage media are not excluded from claims 118 and 128-129 and hence the claims are non-statutory under U.S.C. 101.

6. It appears that in the Remarks on page 16 Applicant is arguing that the IP flow identifier used in the scheduled request is not used by the scheduler in Terry'133's disclosure and hence the newly amended limitations cannot be taught by Terry'133 and the other prior arts cited.

Examiner respectfully disagrees. Applicant is believed to have made a typo error on page 16 because Jorgensen'805 teaches sending IP flow id in a request and not Terry'133. Having said that it is very clear in Jorgensen'805 reference with respect to Figs. 15a&b that in fact the flow id is associated with the flow and the QoS attribute of the flow. Examiner has provided a detailed rejection of the amended limitation. The cited prior arts make it abundantly clear that sending a flow id in a schedule request and associating the request with a given QoS/bandwidth cannot be novel at all.

7. Finally, Applicant continues to argue in the Remarks that on the Remarks on pages 16-17 that Schultz'855 does not disclose a MAC layer at Node B and could not possibly retrieve QoS attributes from the RNC.

Examiner again respectfully disagrees with Applicant and stands by previous position taken by the Examiner in the last Office Action. Applicant assumes that node B does not have a MAC layer because it is not shown in Fig. 2. A base Station or Node B has to have a MAC layer as one of its protocol stack. Such a

knowledge is so fundamental Schultz'855 points out on page 28, Lines 10 and 15-17 that the UMTS has MAC layers as shown in Fig. 7 and any component of the UMTS has the MAC layer and cites some examples. UMTS contains UTRAN and Node B is part of the UTRAN and can have the MAC layers shown in Fig. 7 and the layers can be imposed on the physical layer. Applicant did not distinguish what type of MAC layers in the independent claims and therefore Schultz'855 is still applicable as Schultz teaches MAC-d and does not teach MAC-e layer.

Claim Objections

8. Claims 107 and 108 objected to because of the following informalities: These claims depend on cancelled claim 106. Appropriate correction is required.

Claim Rejections - 35 USC § 101

9. Claims 118 and 128-129 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite "a computer readable storage medium". Given the specification does not give an exhaustive list of storage medium and does not exclude transitory media like propagation medium and signals the claims are not statutory under U.S.C. 101. In particular paragraph 175 of the specification clearly indicates "any kind

of computer readable storage media" and mentions examples and not an exhaustive list and since it states that the software can be stored in any computer readable storage medium and therefore transitory media like propagation medium and signals are not excluded.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 79, 81, 82, 86, 88-93, 95-97, 100, 102, 103, 107-111, 118, 120-123 and 128-129** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al (US Pub. No. 20050249133) in view of Jorgensen (US Pub. No. 2007/0073805) and Schultz (WIPO WO 01/63855 A1).

Regarding **claim 79**, Terry'133 discloses a method for scheduling transmissions of terminal **(i.e. Fig. 1 WTRU 100)** in a mobile communication system **(i.e. Fig. 1)**, method comprising:

receiving a scheduling request **(i.e. EU rate request/assignment paragraphs 16 and 19)** from the mobile terminal **(i.e. Fig. 1 WTRU 100)** at the base station **(Fig. 1**

Node B 200), wherein the scheduling (ii) requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** to the mobile terminal for transmitting data of said plurality of flows to be multiplexed **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102) (see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

scheduling by the base station **(i.e. Node B)** the uplink resource **(i.e. TFCS, data rate, allowed traffic volume - see paragraphs 19 and 28)** for transmission of data of said plurality of flows to be multiplexed onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** by said mobile terminal **(i.e. Fig. 1 WTRU 100) (Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS, rate, traffic volume (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request (i) comprises an identifier identifying one flow of the pluralities of flows and scheduling by the base station the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes and determining, based on the identifier within the scheduling request, the QoS attributes associated with the flow identified by the identifier within the scheduling request, and the QoS attributes that are determined by the determining operation and that are associated with the flow identified by the identifier within the scheduling request.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station **(Fig. 3B – base station 302 - see paragraphs 336, 401, and 443)** the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482. Paragraph 482 and the abstract clearly shows the scheduler in the base station as well as in the mobile is able to impact the shared air interface channel and all flows using the shared air interface based on the scheduling request containing an IP-flow id)** and determining, based on the identifier **(e.g.1234c IP-flow identifier – paragraph 463)**within the scheduling request**(i.e. reservation request block – RRBs in Fig. 12K - see 1216a RRB1 in Fig. 12K see paragraph 464)**, the QoS attributes **(i.e. class and QoS associated with the class see paragraphs 136 and 148)** associated with the flow identified by the identifier within the scheduling request**(RRBs in Fig. 12K - see 1216a RRB1 in Fig. 12K see paragraph 464)**, and the QoS attributes **(i.e. class and QoS associated with the class see paragraphs 136 and 148)** that are determined by the determining operation **(i.e. Fig. 15B processor 1562 does the actual determination)** and that are associated with the flow identified by the identifier within the scheduling request **(see paragraphs 480, 504, and 530 in relation to Figs.**

15A&B. In Fig. 15a at Node B for downlink scheduling each flow is analyzed and for each new flow the QoS requirement is obtained from table 1534. Further each flow based on the class it requested if there is a match between the class and the flow as suggested in paragraphs 136 and 148 are placed in appropriate classes).

In view of the above, having the method of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Terry'133, however, also fails to expressively disclose receiving at the base station from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300.

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses receiving at the base station **(See Figure 2, Node B)** from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are**

muxed at the UE) onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the method of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 81**, Terry'133 discloses a method, wherein each flow (i.e. each mac-d flow) of said plurality of flows has a priority. **(See Paragraphs 6 and 25 each mac-d flow has a priority derived from its corresponding logical channel priorities and priority handling entity)**.

Regarding **claim 82** Terry'133 discloses a method wherein the plurality of flows are multiplexed on a MAC-d flow. **(See Terry'133 paragraph 30 and Fig. 3 and Schultz'855 Fig. 5)**

Regarding **claim 86**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the scheduling request received by the base

station is transmitted via Medium Access Control (MAC) control signaling **(See Schultz'855 Figure 2 where the Mac-d has a dedicated control channel and the schedule request is transmitted from the UE to Node B using similar mechanism shown in Figure 3)**.

Regarding **claim 88**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes is received from a network element **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** terminating the radio resource control signaling of the mobile terminal **(Schultz'855 shows in Figures 2 shows the RNC terminating the UE control message and Schultz'855 in Figure 3 shows the control message is an RRC signaling)**.

Regarding **claim 89**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes are included in a configuration message **(Schultz'855 on page 7, Lines 15-22 shows that the QoS is assigned when the RABs are configured by the RNC and necessitate use of configuration message)**.

Regarding **claim 90**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method wherein the QoS attributes are received by the base station from the radio network controller **(See Schultz'855 on page 7, Lines 19-27 and**

Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805) in a radio link setup message or a radio link reconfiguration message **(Schultz'855 on page 7, Lines 15-22 and last paragraph of page 27 shows that the QoS is assigned when the RABs are configured and reconfigured by the RNC and necessitate use of configuration and reconfiguration message)**.

Regarding **claim 91**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes is received from a serving radio network controller **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 serving RNC 140 passes QoS parameters. See also Fig. 8 block 805).**

Regarding **claim 92,** the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the plurality of flows are associated to a respective one radio bearers between the mobile terminal and the radio network controller and the method further comprises mapping QoS attributes of the radio bearers to the QoS attributes of the respective associated flow**. (Schultz'855 on page 28 in the last paragraph teaches mapping of radio bearer's QoS to the QoS flows as further shown in Figure 7).**

Regarding **claim 93**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the mapping of the QoS attributes comprises taking into account uplink delays on the interface between the base station and the

radio network controller **(Schultz'855 on page 14, lines 10-15 teaches taking into consideration such delays as a QoS parameter).**

Regarding **claim 95**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the identifier comprised in the scheduling request identifies the highest priority flow **(Jorgensen'805 shows the scheduling request highest priority flow in Fig 12 K element 1244b).**

Regarding **claim 96**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the highest priority flow has the highest QoS demands **(Jorgensen'805 shows the scheduling request highest priority flow in Fig 12 K element 1244b).**

Regarding **claim 97**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes comprise at least one of a transfer delay, a guaranteed bit rate, a traffic handling priority, a service type identification, a traffic class and a reordering release timer of the reordering buffer in the Medium Access Control (MAC) entity **(Terry'133 in paragraph 19 shows data rate which is a guaranteed bit rate is a QoS attribute)**.

Regarding **claim 100**, Terry'133 discloses

A base station **(Fig. 1 Node B 200)** for scheduling a plurality of transmissions of a mobile terminal **(i.e. Fig. 1 WTRU 100)** in a mobile communication system **(i.e. Fig. 1)**, said base station comprising:

a communication section **(i.e. Fig. 1 Uplink EU signaling Channel receiver 104)** further adapted to receiving a scheduling request **(i.e. EU rate request/assignment paragraph 19)** from the mobile terminal **(i.e. Fig. 1 WTRU 100)**, wherein the scheduling request (ii) requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** to the mobile terminal for transmitting data of said plurality of flows **(mac-d flows – see paragraph 23)** to be multiplexed **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** on to the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102) (see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

a scheduling section **(Fig. 4 scheduler 222)** adapted to schedule uplink resource **(i.e. TFCS)** for transmission of data of said plurality of flows to be multiplexed onto on **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** by said mobile terminal **(i.e. Fig. 1 WTRU 100)** based on the QoS attributes **(i.e. QoS as priority classes see paragraphs 22 and 30) (Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request (i) comprises an identifier identifying one flow of the pluralities of flows and scheduling section adopted to schedule the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes and a determining section configured to determine based on the identifier within the scheduling request, the QoS attributes associated with the flow identified by the identifier within the scheduling request, and the QoS attributes of the flow identified by the identifier within the scheduling request as determined by the determining section.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling section adopted to schedule **(Flow scheduler 604 in Fig. 6 and Fig. 3 base station 302 - see paragraphs 336, 401, and 443)** the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482. Paragraph 482 and the abstract clearly shows the scheduler in the base station as well as in the mobile is able to impact the shared air interface channel and all flows using the shared air interface based on the scheduling request containing an IP-flow id)** and a determining section configured to determine **(i.e. Fig. 15B processor 1562 does the actual determination)** based on the identifier

(e.g.1234c IP-flow identifier – paragraph 463)within the scheduling request**(i.e. reservation request block – RRBs in Fig. 12K - see 1216a RRB1 in Fig. 12K see paragraph 464)**, the QoS attributes **(i.e. class and QoS associated with the class see paragraphs 136 and 148)** associated with the flow identified by the identifier within the scheduling request**(RRBs in Fig. 12K - see 1216a RRB1 in Fig. 12K see paragraph 464)**, and the QoS attributes **(i.e. class and QoS associated with the class see paragraphs 136 and 148)** of the flow identified by the identifier within the scheduling request as determined by the determining section**(i.e. Fig. 15B processor 1562 does the actual determination) (see paragraphs 480, 504, and 530 in relation to Figs. 15A&B. In Fig. 15a at Node B for downlink scheduling each flow is analyzed and for each new flow the QoS requirement is obtained from table 1534. Further each flow based on the class it requested if there is a match between the class and the flow as suggested in paragraphs 136 and 148 are placed in appropriate classes)** .

In view of the above, having the base station of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base station of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator of the base station optimizing end-user quality of service while being aware of each flow/application.

Terry'133, however, also fails to expressively disclose a base station with a communication section adopted to receive from a radio network (RNC) controller Quality

of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses a base station with a **(See Figure 2, Node B)** a communication section adopted to receive from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the base station of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base station of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 102**, it is noted that the limitations of claim 102 corresponds to that of claim 81 as discussed above, please see the Examiner's comments with respect to claim 81 as set forth in the rejection above.

Regarding **claim 103**, it is noted that the limitations of claim 103 corresponds to that of claim 82 as discussed above, please see the Examiner's comments with respect to claim 82 as set forth in the rejection above.

Regarding **claim 107**, it is noted that the limitations of claim107 corresponds to that of claim 89 as discussed above, please see the Examiner's comments with respect to claim 89 as set forth in the rejection above.

Regarding **claim 108**, it is noted that the limitations of claim108 corresponds to that of claim 91 as discussed above, please see the Examiner's comments with respect to claim 91 as set forth in the rejection above.

Regarding **claim 109**, it is noted that the limitations of claim109 corresponds to that of claim 95 as discussed above, please see the Examiner's comments with respect to claim 95 as set forth in the rejection above.

Regarding **claim 110**, it is noted that the limitations of claim110 corresponds to that of claim 96 as discussed above, please see the Examiner's comments with respect to claim 96 as set forth in the rejection above.

Regarding **claim 111**, it is noted that the limitations of claim111 corresponds to that of claim 97 as discussed above, please see the Examiner's comments with respect to claim 97 as set forth in the rejection above.

Regarding **Claim 118**, Terry'133 discloses a computer readable storage medium for storing instructions that when executed by a processor of a base station **(Fig. 1 Node B 200)** in a mobile communication system cause the base station to schedule transmissions by a plurality of mobile terminals **(i.e. Fig. 1 WTRU 100)**, by:

receiving a scheduling request **(i.e. EU rate request/assignment paragraph 19)** the mobile terminal **(i.e. Fig. 1 WTRU 100)** at the base station **(Fig. 1 Node B 200)**, wherein the scheduling request (ii) requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** to the mobile terminal for transmitting data of the plurality of flows to be multiplexed **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102) (see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

scheduling by the base station **(i.e. Node B)** the uplink resource **(i.e. TFCS, data rate, allowed traffic volume - see paragraphs 19 and 28)** for transmission of data of said plurality of flows to be multiplexed onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** by said mobile terminal **(i.e. Fig. 1 WTRU 100) (Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS, rate, traffic volume (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request (i) comprises an identifier identifying one flow of the pluralities of flows and scheduling by the base station the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes and determining, based on the identifier within the scheduling request, the QoS attributes associated with the flow identified by the identifier within the scheduling request, and the QoS attributes that are determined by the determining operation and that are associated with the flow identified by the identifier within the scheduling request.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station **(Fig. 3B – base station 302 - see paragraphs 336, 401, and 443)** the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes **(see uplink and downlink frames**

transmitted using flow id in Fig. 13 as detailed in paragraph 482. Paragraph 482 and the abstract clearly shows the scheduler in the base station as well as in the mobile is able to impact the shared air interface channel and all flows using the shared air interface based on the scheduling request containing an IP-flow id)) and determining, based on the identifier **(e.g.1234c IP-flow identifier – paragraph 463)**within the scheduling request**(i.e. reservation request block – RRBs in Fig. 12K - see 1216a RRB1 in Fig. 12K see paragraph 464),** the QoS attributes **(i.e. class and QoS associated with the class see paragraphs 136 and 148)** associated with the flow identified by the identifier within the scheduling request**(RRBs in Fig. 12K - see 1216a RRB1 in Fig. 12K see paragraph 464),** and the QoS attributes **(i.e. class and QoS associated with the class see paragraphs 136 and 148)** that are determined by the determining operation **(i.e. Fig. 15B processor 1562 does the actual determination)** and that are associated with the flow identified by the identifier within the scheduling request **(see paragraphs 480, 504, and 530 in relation to Figs. 15A&B. In Fig. 15a at Node B for downlink scheduling each flow is analyzed and for each new flow the QoS requirement is obtained from table 1534. Further each flow based on the class it requested if there is a match between the class and the flow as suggested in paragraphs 136 and 148 are placed in appropriate classes)**.

In view of the above, having the medium of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph

40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Terry'133, however, also fails to expressively disclose receiving at the base station from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses receiving at the base station **(See Figure 2, Node B)** from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the medium of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS

requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 120**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose the method according to claim 79, wherein the scheduling request requests allocation of an uplink resource to the mobile terminal for transmitting data of said plurality of flows multiplexed to a Protocol Data Unit (PDU) on the dedicated uplink channel **(See Terry'133 paragraph 22 discussing multiplexed MAC PDU and in paragraph 23 it is identified as MAC-e PDU – see further paragraphs 29-30 and claim 45 to understand mac d s are muxed into a MAC-E PDU)**.

Regarding **claim 121**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose the method according to claim 120, wherein the PDU is MAC-e PDU **(see Terry'133 Paragraph 23 it is identified as MAC-e PDU)**

Regarding **claim 122**, it is noted that the limitations of claim122 corresponds to that of claim 120 as discussed above, please see the Examiner's comments with respect to claim 120 as set forth in the rejection above.

Regarding **claim 123**, it is noted that the limitations of claim123 corresponds to that of claim 121 as discussed above, please see the Examiner's comments with respect to claim 121 as set forth in the rejection above.

Regarding **claim 128**, it is noted that the limitations of claim128 corresponds to that of claim 120 as discussed above, please see the Examiner's comments with respect to claim 120 as set forth in the rejection above.

Regarding **claim 129**, it is noted that the limitations of claim129 corresponds to that of claim 121 as discussed above, please see the Examiner's comments with respect to claim 121 as set forth in the rejection above.

12. **Claims 83-84, 99, 113, 124-125, 127** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805, and Schultz'855 as applied to claims 79 and 100 above, and further in view of Lucent-3GPP ("Scheduled and Autonomous Mode Operation for the Enhanced Uplink", 2003, 3GPP TSG RAN WG1#31 R1-03-0284).

Regarding **claim 83**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method wherein the QoS attributes comprises a transmission mode associated with the data of the flow.

Lucent-3GPP discloses a method wherein the QoS information comprises a transmission mode associated with the data flow. **(In section 2 and 4 it is shown transmission mode has to do with a choice of scheduling and if Node B controlled scheduling then the QoS info is buffer status, power margin and channel quality)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of

Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment.

Regarding **claim 84**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor.

Lucent-3GPP discloses a method, wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor. **(Lucent-3GPP teaches a transmission mode where the flow is transmitted applying an additional gain factor in bullet item 4 of page 5)**

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment and ability to do H-ARQ with greater flexibility as stated in bullet item 3 of page 5 in Lucent-3GPP's disclosure.

Regarding **claim 99**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fails to disclose a method wherein further comprising considering a predetermined gain factor to be additionally applied to the transmission when scheduling the mobile terminal from which the scheduling request has been received at the base station.

Lucent-3GPP discloses a method, wherein further comprising considering a predetermined gain factor to be additionally applied to the transmission when scheduling the mobile terminal from which the scheduling request has been received at the base station **(Lucent-3GPP teaches a transmission mode where the flow is transmitted applying an additional gain factor in bullet item 4 of page 5 and it is predetermined to meet the need of already known uplink transport channel power requirement).**

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment and ability to do H-ARQ with greater flexibility as stated in bullet item 3 of page 5 in Lucent-3GPP's disclosure.

Regarding **claim 113**, it is noted that the limitations of claim113 corresponds to that of claim 99 as discussed above, please see the Examiner's comments with respect to claim 99 as set forth in the rejection above.

Regarding **claim 124**, the combination of Terry'133, Jorgensen'805, Lucent-3GPP and Schultz'855 disclose the method according to claim 113, wherein the scheduling request requests allocation of an uplink resource to the mobile terminal for transmitting data of said plurality of flows multiplexed to a Protocol Data Unit (PDU) on the dedicated uplink channel **(See Terry'133 paragraph 22 discussing multiplexed MAC PDU and in paragraph 23 it is identified as MAC-e PDU – see further paragraphs 29-30 and claim 45 to understand mac d s are muxed into a MAC-E PDU)**.

Regarding **claim 125**, the combination of Terry'133, Jorgensen'805, Schultz'855 Lucent-3GPP disclose the method according to claim 124, wherein the PDU is MAC-e PDU **(see Terry'133 Paragraph 23 it is identified as MAC-e PDU)**

Regarding **claim 127**, the combination of Terry'133, Jorgensen'805, Schultz'855 Lucent-3GPP disclose the method according to claim 120, wherein the PDU is MAC-e PDU **(see Terry'133 Paragraph 23 it is identified as MAC-e PDU)**

13. **Claims 85, 87, 104 and 105** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805 and Schultz'855 as applied to

claim 79 above, and further in view of Fujitsu-3GPP ("Signaling framework for enhanced uplink scheduling", August 2004, 3GPP TSG RAN1 and RAN2 meetings).

Regarding **claim 85**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, wherein the scheduling request further comprises information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal.

Fujitsu-3GPP discloses a method, wherein the scheduling request further comprises information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal. **(Fujitsu-3GPP shows Scheduling Information (SI) request with buffer occupancy and transmit power from the UE to Node-B as shown in Figure 1 and item 1 under Uplink Signaling on page 2)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Fujitsu-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by LFujitsu-3GPP, since Fujitsu-3GPP clearly states in Section 1 that the modification results in a flexible signaling framework.

Regarding **claim 87**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, further comprising transmitting a scheduling

assignment from the base station to at least one of the mobile terminals from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates an uplink resource allocated to the mobile terminal on the dedicated uplink channel.

Fujitsu-3GPP discloses a method, further comprising transmitting a scheduling assignment **(i.e. SAs in Figure 1)** from the base station **(i.e. Node B)** to at least one of the mobile terminals **(UE of Figure 1)** from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates a uplink resource allocated **(rate, power, time, bandwidth)** to the mobile terminal on the dedicated uplink channel **(See items 1 and 2 on page 3 regarding downlink Schedule Assignment)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Fujitsu-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Fujitsu-3GPP, since Fujitsu-3GPP clearly states in Section 1 that the modification results in a flexible signaling framework.

Regarding **claim 104**, it is noted that the limitations of claim 104 corresponds to that of claim 85 as discussed above, please see the Examiner's comments with respect to claim 85 as set forth in the rejection above.

Regarding **claim 105**, it is noted that the limitations of claim105 corresponds to that of claim 87 as discussed above, please see the Examiner's comments with respect to claim 87 as set forth in the rejection above.

14. **Claims 98 and 112** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805 and Schultz'855 as applied to claim 79 above, and further in view of Cheng et al (US Pub. No 2004/0228313 A1).

Regarding **claim 98**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method using a scheduling request. **(See Terry'133 paragraph 19)**

The combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel.

Cheng'313 discloses a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel **(Cheng"313 in paragraph 28 and Figure 2 indicates a service type indicator indicating a transmission of data of the flow carrying a delay-critical service such as video conference on the uplink)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Cheng'313, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Cheng'313, since Cheng'313 clearly states in paragraphs 11 and 12 that the modification results in a flexible signaling framework to map data for uplink transmission.

Regarding **claim 112**, it is noted that the limitations of claim112 corresponds to that of claim 98 as discussed above, please see the Examiner's comments with respect to claim 98 as set forth in the rejection above.

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Habte Mered/
Examiner, Art Unit 2474

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2474